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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,200	03/10/2004	Bor-Jen Wu	26048	2435

7590 06/30/2004  
NATH & ASSOCIATES PLLC  
1030 15TH Street NW - 6th Floor  
Washington, DC 20005

EXAMINER
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EVERHART, CARIDAD

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/796,200	<b>Applicant(s)</b> WU ET AL.	
	<b>Examiner</b> Caridad M. Everhart	<b>Art Unit</b> 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-20 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Horng, et al. (US 2004/0079951A1).

Horng discloses forming an LED epitaxial structure on a sacrificial substrate, forming a metal layer(paragraph 0018 and 0020), removing the sacrificial GaAs substrate (paragraph 0021), and physically depositing a metal layer and an insulating film(paragraph 0022 ), and plating a copper layer(paragraph 0023) which is the permanent substrate. A second metal layer can be deposited on the LED side(paragraph 0024). The substrate removing step is by etching (paragraph 0021). The layer of Au or of Pt between the first electrode layer and the permanent substrate(paragraph 0025) is interpreted to be a conduction enhancing layer. There are streets formed for dicing, which is interpreted to be a disclosure of a dicing step(paragraph 0026).

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoo (US 2003/0189212A1).

Yoo discloses LED (paragraph 0031), forming a temporary substrate(paragraph 0039), forming an LED epitaxial structure(paragraph 0032, forming individual chips(paragraph 0035 describes forming trenches), forming first electrode layer(paragraph 0040, forming an epoxy dielectric layer to fill up the spaces between the individual chips(paragraph 0041, in which the epoxy adhesive layer is interpreted as the epoxy dielectric layer), forming a permanent metal substrate(paragraph 0047), removing the dielectric layer and forming second electrode layer(paragraph (paragraph 0054) and dicing(paragraph 0055). There may be an adhesion layer of Cu or Au or Al (paragraph 0050). The metal substrate may be formed by electroplating (paragraph 0050). The substrate metal may be Cu(paragraph 0050). The temporary substrate may be removed by lift-off(end of paragraph 0041).

The prior art of record not relied upon is considered relevant to applicant's disclosure.

Oman, et al. (US 2004/0077114A1) discloses a silicon substrate with ohmic contact layer on the silicon substrate rather than a metal substrate.

***Allowable Subject Matter***

Claims 13-20 are allowed.

The prior art of record does not teach or suggest the limitations "a conduction layer to cover said first electrodes layer and said first dielectric layer...forming a second

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dielectric layer on a region of said conduction enhancing layer corresponding to said first dielectric layer in a vertical direction".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 571-272-1892. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Everhart  
6-25-2004

  
CARIDAD EVERHART  
PRIMARY EXAMINER